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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,357	10/08/2002	Hatem Belfadhel	121123-1	5645
43248	7590	03/06/2006		
CANTOR COLBURN LLP - GE PLASTICS - SMITH 55 GRIFFIN RD SOUTH BLOOMFIELD, CT 06002			EXAMINER BOYKIN, TERRESSA M	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/065,357

Applicant(s)

BELFADHEL ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 1--24-05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Response to Arguments**

In response to applicant's argument filed 12-13-05 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a vessel, a catalyst bed, and a distribution/production collection system) are in fact disclosed in the reference albeit the terminology may not be the same. It is noted that the reference *is* entitled to describe the invention in other terms not necessarily recited or exactly stated as in applicants claims. Note for example with regard to USP 4669890, the reference discloses that more limited embodiments of this reference involve different means for adding, distributing, collecting or withdrawing fluid that enter or exit the impingement compartment and particular arrangements or configurations of the fluid collection barrier between particle beds and the impingement compartment.

Note that claim 11 of the reference discloses that The apparatus of claim 10 wherein

- a. the apparatus contains a space above said flow barrier and below an upper catalyst bed for collecting fluid;
- b. an odd number of channels in said flow barrier;
- c. a fluid impingement compartment located in a center channel with the sides of the center channel defining the horizontal bottom and two parallel vertical sides of said fluid impingement compartment and having outlets for said fluid impingement compartment located in said horizontal bottom side, an imperforate horizontal plate located in an upper center portion of said channel

which forms the top of said fluid impingement compartment, and two opposing vertical end plates for said impingement compartment which extend to the sides of said channel, with each end plate containing a single circular inlet opening; and

d. a space below said flow barrier and above a lower catalyst bed for distributing fluid.

With regard to claim 12 wherein a quench distribution system is located above said flow barrier.

a. the apparatus contains a space above said flow barrier and below an upper catalyst bed for collecting fluid;

b. an odd number of channels in said flow barrier;

c. a fluid impingement compartment located in a center channel with the sides of the center channel defining the horizontal bottom and two parallel vertical sides of said fluid impingement compartment and having outlets for said fluid impingement compartment located in said horizontal bottom side, an imperforate horizontal plate located in an upper center portion of said channel which forms the top of said fluid impingement compartment, and two opposing vertical end plates for said impingement compartment which extend to the sides of said channel, with each end plate containing a single circular inlet opening; and

d. a space below said flow barrier and above a lower catalyst bed for distributing fluid and claim 12 wherein a quench distribution system is

located above said flow barrier.

See also Figures 1, 3 and 4 may be envisaged using the language of applicant's claims.

### **Claim Rejections - 35 USC § 112**

**Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

As used in each of the claim 4 the recited "substantially" is a broad term. *In re Nehrenberg* (CCPA) 126 USPQ 383. Thus, when a word of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. See *Seattle Box Company, Inc. V. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984); the standard must circumscribe a specifiable value, *In re Mattison*, 184 USPQ 484, or where this is not practical, a specifiable concept immediately recognizable to one of ordinary skill in the art. *In re Marosi*, 218 USPQ 289; *Statterproof Glass v Libby Owens Ford*, 225 USPQ 641. Applicants must verify that such is the case in this instance.

The following is repeated for applicant's convenience and continuity of record.

### **35 USC 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4669890 see abstract, figures 1, 3 and 4, cols. 3 –6 and claim 1.**

**USP 4669890** discloses a fluid mixing apparatus which is used in a vertical flow fluid-solid contacting column having a fluid inlet and a fluid outlet at opposite ends, two or more distinct beds of particulate material, and single or dual phase fluid flow. The mixing apparatus comprises a vertical flow barrier, positioned intermediate two adjacent beds of particulate material, having a substantially imperforate outer area and at least one central opening for passing fluid between beds and a fluid impingement compartment located at the center of the barrier. The impingement compartment has vertical sides containing at least two similarly sized inlet openings in communication with the upstream side of the barrier for receiving the fluid flow detained by the barrier into the compartment with the sides and inlet openings being arranged so that the projection of all inlets lie in a common horizontal plane and intersect the other inlet projections at equal angles so that fluid entering the compartment will converge at a center point equidistant from all inlet openings. Mixing is promoted by sizing the inlet openings to produce fluid jets having a length at least equal to the distance between the inlet openings and the center point so that the fluid streams impact turbulently. Fluid leaves the impingement compartment through a fluid outlet comprising the central opening of the barrier, which is in communication with the downstream side of the barrier and provides a balanced flow out of the impingement compartment.

Each particle bed is composed of solid particles, which can be in the form of pills, sphere cylinders or other extruded shapes. The actual properties of particles will depend upon the process, which is carried out in the containment vessel. Generally, this means that the particles will consist of an adsorbent or a catalyst. Above each particle bed is a layer of support material 3, which serves to hold down the particles and enhance flow distribution over the bed. This material, which is often employed, but not essential, will usually consist of ceramic balls or other inert compositions having a regular shape. Support material 4 is also often provided beneath the particle bed to prevent migration of the catalyst particles through a perforated plate profile or screen element that is used to define the lower boundary of the particle bed. Support material at the bottom of the catalyst bed is similar in shape and composition to that used above the bed.

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FIG. 1 shows a partially cutaway elevation view of a vertical flow contacting column having multiple beds of catalyst and mixing devices located between particle beds in accordance with this invention.

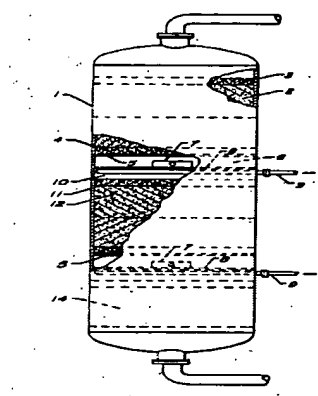
*Figure 1*

FIG. 3 is a partial elevation view of a down flow reactor with a cutaway proportion showing a more limited embodiment of the mixing chamber having a series of parallel channels for collecting fluid which passes through a rectangular mixing zone. FIG. 4 is a plan view of the channel collection system for the mixing zone of FIG. 3.

The claims simply state an "up flow reactor" with no specific limitations therein. Thus, it would have been obvious for one of ordinary skill in the art to manufacture a dihydroxy compound using the above reactor since it is disclosed therein that such a reactor may be used in condensation reactions and the like. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **THIS ACTION IS MADE FINAL**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.



The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

  
Examiner Terressa Boykin

TERRESSA M. BOYKIN  
PRIMARY EXAMINER